



Straight talk with... George Radda

Singapore, the fastest growing economy in Asia last year, has enjoyed a decade of free-flowing research funding. Money is still pouring in, but the question remains whether money can buy international-class science, especially after the sudden attachment of strings to grant money starting last fall. Perhaps the best person to answer this question is Sir George Radda (he received his knighthood in 2000). Radda was the chief executive of the UK's Medical Research Council (MRC) from 1996 to 2003. In his final year at the helm of the MRC, he had his first interaction with Singapore's budding biomedical program as a member of the A*STAR Biomedical Sciences International Advisory Council. Shortly thereafter, Radda was asked to help with the next five years' science and technology plan.

A pioneer in nuclear magnetic resonance imaging, he became the founding chairman of the Singapore Bioimaging Consortium, traveling to Asia nearly once a month before he moved to Singapore three years ago. In April 2009, he was appointed chairman of the city-state's Biomedical Research Council (BMRC), which coordinates the country's biomedical activities and oversees institutes that comprise the Biopolis, a hub of more than 2,000 researchers and staff. Here he talks with **David Cyranoski** about what's ahead for Singapore.

What has been most important or impressive achievement for Singapore's biomedical community?

Singapore is now an international center of research. Other places such as Hong Kong and Taiwan are good, but they are not international. Sixty percent of the scientists here are non-Singaporean. There are 17 different nationalities in my lab, for example.

How is the support in Singapore different?

There's long-term vision and planning here. Singapore looks ahead—not just to next year's budget. There's a fixed five-year budget,

independent of the financial situation. Here you know what you're going to get.

Why is Singapore able to do that? Why are scientists so successful at lobbying?

It was the government that decided. This is not from lobbyists at all. Look at the CVs of [Singapore's] cabinet ministers. They are all engineers, lawyers, *et cetera*. The prime minister [Lee Hsien Loong] got a degree in mathematics at Cambridge. I never came across such an intelligent leadership.

The government is announcing increases in research and development spending, but there have also been complaints from researchers about the funding situation. What is happening?

The Ministry of Trade and Industry announced a budget of S\$16.1 billion (\$12.8 billion) for the next five years; [of that,] S\$3.7 billion will go to biomedical sciences. How it will be divided is not yet decided, but it includes funding for the BMRC, the universities, the health ministry and other organizations. It means a 12% increase [over 2006–2010]. At the BMRC, we expect it at least to be stable.

What are the priority fields?

They are not yet set. We will consider how well our community is communicating with the clinical side. We are interested in gastric cancer, which is important in Asia. We will also focus on eye research, ophthalmology and glaucoma.

Schizophrenia has also been mentioned as a priority field.

One of clinical units here is major mental health hospital. Schizophrenia has a significant genetic component. The Genome Institute of Singapore will study the genetics of schizophrenics. There will also be clinical imaging studies on schizophrenics. Many of the clinical research areas will be led by clinicians.

Are there enough research clinicians?

There is a plan to double the number. Unless you have high-class clinical researchers, it won't work out.

Is Singapore science a bubble, created by foreign scientists and huge funding that could both disappear?

Initially, scientists had to come from abroad. But Singapore had the foresight, driven by [former A*STAR head] Philip Yeo, who knew to involve Singaporean students. Currently, 1,000 students are studying abroad on A*STAR scholarships, and they are beginning to come back. Sixty returned this year. It's not a bubble. It's now a leader in this part of this world.

Are you not worried about the departure of top scientists, such as mouse cancer geneticists Neal Copeland and Nancy Jenkins?

Neal and Nancy decided to leave. They are outstanding scientists, no question. I'm sad to see them go, but they probably don't like the more mission-oriented approach. They leave with good legacy and good influence. They've now decided to do something else.

Has the recruitment policy changed, then?

Before, Singapore offered a challenge for senior people that thought they could do one more big thing. That was an attraction. Now we need to get people with 10–15 years' experience. If you look at the A*STAR fellowship, which is somewhat like the Howard Hughes, there was never such a good group as the 2010 applications. In terms of the next generation, I'm not worried.